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XXX. *Observations on the Eclipse of the Sun of August 5, 1766, made at Colombes, the Observatory of the Marquis of Courtenvaux, 20° West of the Royal Observatory at Paris, and in Lat. 48° 55' 28". By M. Messier, Astronomer to the Marine of France, of the Royal Academy of Sciences at Paris, and F. R. S. Translated by M. Maty, M. D. Sec. R. S.*

Read Nov. 26, 1766. **T**HE Marquis of Courtenvaux having desired me to observe the eclipse of the 5th of August 1766, in his Observatory, I got thither some days before the observation, in order to verify the clocks, by corresponding altitudes of the sun, and by its transits, with an instrument placed in the plane of the meridian. It is a common refractor of 5 feet focus, which does not vary a second from the plane of the meridian. The day of the eclipse, and the next day, I took a great many corresponding altitudes, and likewise observed the sun with the transit instrument. The sky was perfectly clear at the time of these observations, as well as during the eclipse. The clock which I made use of was adjusted to the mean time; it goes very regularly. For the observation of the eclipse, I employed an excellent Gregorian telescope of two feet focus, constructed in England by the celebrated Mr. Short. The tube was

L 1 2

mounted

mounted on a brass parallax machine exactly divided. There likewise was a micrometer with silk threads adapted to this instrument, which was moveable every way, in so much that it was easy to place it according to the sun's parallel, and to measure with great facility the solar diameter, as well as the distances of the cusps, and the parts of the sun which remained uncovered. To make the observation of the beginning, I had determined, by means of the micrometer, the point of the solar limb, where the contact was to happen. This was a little lower than the sun's diameter parallel to the equator; the point of contact was not distant from it above $2' 30''$, and the time was exactly $5^h 43' 50''$ true time. Mr. Jaurat, who observed in the same observatory with myself, judged the beginning $3\frac{1}{2}''$ later by a refractor of 5 feet focus.

Here follows the result of my observations :

Time by the Clock.	Tr. Tim.	Parts of the Microm.	Dist. of the Cusps.	Light Parts of the Sun.	Diameter of the Sun.
H. M. S.	H. M. S.		M. S. T.	M. S. T.	M. S. T.
0 3 29	0 0 0	1982			
5 47 14 $\frac{1}{2}$	5 43 50	Beginning of the Eclipse to a Second			
5 53 0	5 49 35 $\frac{1}{2}$	713	11 22 56		
5 58 0	5 54 35 $\frac{1}{2}$	938	14 58 27		
6 1 51	5 58 26 $\frac{1}{2}$	1660		26 30 0	
6 5 4	6 1 39 $\frac{1}{2}$	1151	18 22 28		
6 8 0	6 4 35 $\frac{1}{2}$	1986			31 42 16
6 11 0	6 7 35 $\frac{1}{2}$	1288	20 33 42		
6 14 0	6 10 35 $\frac{1}{2}$	1423 $\frac{1}{2}$		22 43 27	
6 18 13	6 14 48 $\frac{1}{2}$	1413	22 23 25		
6 20 54	6 17 29 $\frac{1}{2}$	1230 $\frac{1}{2}$		19 38 36	
6 27 7	6 23 43	1248		19 55 23	
6 30 1	6 26 37	1513	24 9 12		
6 36 0	6 32 36	1534	24 29 19		
6 38 23	6 34 59	1192		19 1 44	
6 42 9	6 38 45	1988			31 44 11
6 45 34	6 42 10	1514 $\frac{1}{2}$	24 10 38		
6 57 25	6 54 1	1399	22 20 0		
7 4 26	7 1 2	1289	20 34 39		
7 8 36	7 5 12	1183	18 53 7		
7 11 54	7 8 30	1053	16 48 35		
7 16 43	7 13 19	905 $\frac{1}{2}$	14 27 18		
7 22 22	7 18 58	643	10 15 53		
	7 22 36				

The sun disappears behind the trees of the park, but very near the horizon, and the eclipse is almost at an end.